MY MOBILE CLASS ASSISTANT APPLICATION ON ANDROID PLATFORM

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EXECUTIVE SUMMARY

The exponential growth of information has made it important for learning to take place quickly. The emergence of ICT and the Internet has greatly influenced the way knowledge delivered. This has resulted in the development of learning management system. Here, the developer sees this sophisticated technology to help lecturers at the university to reduce their burdens in spreading the knowledge or announcements about their future class planning to students. This report presents brief detail of the project based for a task or event viewer via Android mobile application to be developed as part of University Malaysia Pahang (UMP) final year project. The aim of this project is to develop an Android-based mobile application that can provide information delivery from one device to another. This information could be an announcement, event, task or reminder. This project also aimed to establish connections of integrated databases of user's information among UMP lecturers and students. This project is a project based on Android OS platform which enables the students to view the updated event of current subject taken on their smart phone. The content that lecturers post from their mobile application will be delivered to the student's mobile application. The project was implemented in a small networking environment within FSKKP, UMP for the simulation testing purpose. Besides, there are two types of tool used for this project which are Eclipse SDK and WampServer. Eclipse SDK is used to run the source code of Android Java programming whereby WampServer is used to design the database of the project. The results from this project would be an integrated system which capable of receiving input from lecturers through the mobile application, manipulating the received data and outputting them to students in a graphical form via the mobile application installed on their smart phone. As a conclusion, this project provide benefits especially to the students as it will focused on preparing a to-do-list tasks which enables the students to manage their student life activities such as managing several tasks (quizzes, tests, assignments). With this application, we can learn to facilitate another way of communication among lecturers and students through the usage of new technology mobile environment on Android platform.

RINGKASAN EKSEKUTIF

Pertumbuhan eksponen maklumat telah menjadikannya penting bagi pembelajaran berlaku dengan cepat. Kemunculan ICT dan Internet telah banyak mempengaruhi cara ilmu yang disampaikan. Di sini, pemaju melihat teknologi canggih ini untuk membantu pensyarah-pensyarah di Universiti untuk mengurangkan beban mereka dalam menyebarkan pengetahuan atau pengumuman mengenai kelas pada masa hadapan. Laporan ini membentangkan butiran ringkas projek berasaskan pemapar tugas atau peristiwa melalui aplikasi mudah alih Android untuk dibangunkan sebagai sebahagian daripada projek tahun akhir Universiti Malaysia Pahang (UMP). Matlamat projek ini adalah untuk membangunkan aplikasi Android mudah alih yang boleh menyediakan penyampaian maklumat dari satu peranti yang lain. Maklumat ini boleh menjadi satu pengumuman, peristiwa, tugas atau peringatan. Projek ini juga bertujuan untuk mewujudkan sambungan pangkalan data bersepadu pengguna maklumat antara pelajar dan pensyarah-pensyarah UMP. Projek ini merupakan satu projek yang berasaskan platform Android OS yang membolehkan para pelajar melihat tugas tersebut. Kandungan yang diberikan oleh pensyarah daripada aplikasi mudah alih mereka akan dihantar untuk paparan di aplikasi mudah alih pelajar. Projek ini telah dilaksanakan dalam persekitaran rangkaian yang kecil dalam lingkungan FSKKP, UMP untuk tujuan simulasi pengujian. Selain itu, terdapat dua jenis alat yang digunakan untuk projek ini iaitu Eclipse SDK dan WampServer. Eclipse SDK digunakan untuk menjalankan kod sumber pengaturcaraan Android Java manakala WampServer digunakan untuk mereka bentuk pangkalan data bagi projek ini. Hasil daripada projek ini akan menjadi satu sistem bersepadu yang mampu menerima input daripada pensyarah melalui aplikasi mudah alih, memanipulasi data yang diterima dan mengeluarkan data kepada pelajar dalam telefon pintar mereka. Kesimpulannya, projek ini memberikan manfaat terutamanya kepada para pelajar kerana ia akan memberi tumpuan kepada menyediakan tugasan yang membolehkan pelajar untuk mengurus aktiviti-aktiviti kehidupan pelajar mereka seperti menguruskan beberapa tugasan (kuiz, ujian, tugasan). Dengan aplikasi ini, kita boleh mengadaptasi cara lain komunikasi antara pensyarah dan pelajar melalui penggunaan persekitaran mudah alih teknologi baru dalam platfom Android.

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LIST OF ACRONYMS/ ABBREVIATION/ GLOSSARY

ADT	Android Development Tool
Apk	Android Application Package file
App	Application
CSS	Cascading Style Sheet
FSKKP	*Fakulti Sistem Komputer dan Kejuruteraan Perisian*
GUI	Graphical User Interface
ICT	Information and Communication Technology
IDE	Integrated Development Environment
iOS	iPhone Operating System
LMS	Learning Management System
OS	Operating System
PC	Personal Computer
PHP	Hypertext Preprocessor
PSM	*Projek Sarjana Muda*
SDK	Software Development Kit
SDLC	System Development Life Cycle
SMS	Short Message Service
SQL	Structured Query Language
UML	Unified Modeling Language
UMP	University Malaysia Pahang

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PART 1

INTRODUCTION

1.1 Overview

Current development of the technology is currently a benchmark for a nation to be declared as a contemporary nation. The facilities provided through info technology is not solely expedite even save time, prices will even amendment the approach teaching either at college, college, or any institution. Rapid technological developments have begun to amendment direction and also the ancient method of teaching. Ancient teaching relies on the book, diagrams and charts. This manner practiced since past times from condemned by technology-based teaching strategies like computers. This can be as a result of the pc has the flexibility to form simulations and integrate transmission options like animation and sound.

Here, the developer sees this refined technology to assist lecturers at the university to scale back their burdens in spreading the information or announcements regarding their future category attending to students. In delivering announcements and latest info, lecturers typically use social networking sites like Facebook, E-mail and Moodle to facilitate them. This may result in plenty of use of the account for the scholars to visualize the newest info on the standing of the class which will be conducted. For developer, the usage of associate application on android mobile platform will save time and prices still as cut back memory usage on the student's laptop. The mobile courseware for teaching and learning may be a technique that applies accelerated learning techniques like delivering course notes and assessments for UMP students.

'My Mobile Class Assistant App on Android Platform' is a project based on Android OS application which enables the students to view the course activities of the current subject taken on their smartphones. The content that their lecturers post from this system will synchronize for students to view from their mobile devices on the 'My Mobile Class Assistant' application. Students will also receive automatic, personalized course events delivered straight to their mobile devices whenever lecturers post on course content, announcements, graded items, tests, and many other course activities.

These accelerated teaching and learning techniques will help the students especially for the students of Faculty Computer Science (FSKKP) to do quick revision, organized schedule and planner on their study. For the simulation testing of this project, it will be applied to the three subjects taken by students which are PSM, Network Technologies and English for Professional Communication.

1.2 Problem Statement

The exponential growth of data has created it vital for learning to require place quickly. Facing this challenge needs new wondering however we tend to acquire information and skills additionally as how we develop learning resources that may contend with the knowledge-based economy. The emergence of ICT and also the web has greatly influenced the manner information delivered. This has resulted within the development of learning management system (Rusmini Ku Ahmad, 2011).

A Learning Management System (LMS) could be a set of tools that facilitate the delivery of the proper content to the correct students, at the correct time and within the right format. LMS usually give, however not restricted to registration and student pursuit, content creation and delivery capabilities, analysis and development designing and resource management organization. Once it involves LMS in Malaysia, several would solely understand the existence of Moodle. Indeed, Moodle is known chiefly as a result of it is broadly speaking utilized by instructional establishments across the world particularly once The university in United Kingdom is defrayment millions in

exploitation it as its main LMS (Chuah Kee Man, 2011). With massive of user base, this enables Moodle to endure speedy development and improve. However, there are several ASCII text file LMS out there and systems are nearly as good as Moodle. Realizing the widespread use of mobile devices in Malaysia, one amongst the ways that to expedite the acceptance of LMS is to leverage on the employment of mobile technology that may facilitate mobile learning. Mobile learning also will facilitate overcome the matter of accessibility and property.

Referring to existing Moodle system in UMP, developer find there are restrictions on the delivery of information related to the subject matter involved to the student. For example, students need to see the upcoming tasks and assignments given by lecturers in different outline interfaces. Although, there are some subjects that are not used by the lecturers to deliver information. This will contribute to the problem a lot of wasted space. Developer sees this as an indication of problems to develop application that are more easily used by both students and lecturers.

Given the amount of burden that a modern-day students has to bear, it is only befitting that there should be an application which helps them manage their assessments and daily routine in a better way. ‘My Mobile Class Assistant App’ is a comprehensive class organizer for each class. With this app, students can avail plenty of other handy features such as test reminders for various classes along with receiving notifications for each and much more. Students will be able to see all the courses activities related to all their registered subjects listed in a single outline interface. This can make it easier for students to organize their learning and assignments schedule in a more orderly fashion. They may know the list of the datelines of assignments to be delivered in their mobile phones as of today the students are able to have a sophisticated smartphone and can be beneficially used. They can also continue to receive the latest announcements or notifications given by the lecturers instead of using "sticky-notes" for the purpose of their reminder.

1.3 Objectives

Generally, the project is finished to attain the goals. The goals of the project are explicit as below:

i) To develop an Android-based mobile application for event/task viewer.
ii) To provide information delivery from one device to another.
iii) To facilitate another way of communication among lecturers and students through mobile environment.

1.4 Review of previous work/project and relationship to current project

1.4.1 Mobile Learning Application

Smart, mobile devices are the popular associated quickest growing computing platform with an estimated 1.6 billion mobile device users by 2013 as compared to a current estimate of two billion computer users. This speedy proliferation of mobile devices over the last 5 years has dramatically altered the platform that's used for social, business, diversion, gaming, productivity and promoting using software system applications. Containing world positioning sensors, wireless property, image or video capabilities, inbuilt internet browsers, voice recognition, among different sensors, mobile devices have enabled the event of mobile applications that may give wealthy, highly-localized, context-aware content to users in hand-held devices equipped with similar procedure power as a typical computer (Josh Dehlinger, 2011).

Christopher Cheong, in his article on "Designing a Mobile-app-based Cooperative Learning System", aforesaid that the classes of the mobile learning applications are often as each placed learning and cooperative learning. Below is that the table of categorisation of mobile learning applications that tailored from (Naismith,2004).

Learning Theory and Key Theorists	Descriptions	Activities
Behaviourist learning (Pavlov, 1927; Pavlov & Anrep, 2003; Skinner, 1968)	Activities promoting learning as a change in learners' observable actions.	Drill and feedback Classroom response systems (clickers)
Constructivist learning (Bruner, 1966; Papert, 1980; Piaget, 1929)	Activities in which learners actively construct new ideas or concepts based on both their previous and current knowledge.	Participatory simulations
Situated learning (Brown, Collins, & Duguid, 1989; Lave & Wenger, 1991)	Activities promoting learning within an authentic context and culture.	Problem and case-based learning Context awareness
Collaborative learning (Vygotsky, 1978)	Activities promoting learning through social interaction.	Mobile computer-support collaborative learning
Informal and lifelong learning (Eraut, 2000)	Activities supporting learning out-side a dedicated learning environment and formal curriculum.	Supporting intentional and accidental learning episodes
Learning and teaching support (No key theorists)	Activities assisting the coordination of learners and resources for learning activities.	Personal organization Support for administrative duties (e.g., attendance)

Table 1.1: Categorisation of mobile learning applications

1.4.2 Android versus iPhone

Based on the survey done by The Fortune a thousand web sites, android was quicker than iPhone in eighty four of the tested websites, and iPhone beat android in Sixteen Personality Factor Questionnaire of the races. This demonstrates android wasn't simply quicker overall, however rather provided a quicker browsing expertise four

times out of five. Android's edge fully disappeared once observing mobile specific sites. These are sites that were changed to match the mobile user expertise, and have a tendency to be smaller and lighter. On mobile sites, android was solely third quicker, with a median load time of 2.085 seconds versus iPhone's 2.024 that are effectively identical. On non-mobile sites, android was fifty nine quicker, with a median load time of 2.180 seconds compared to 3.463 seconds on iPhone. For this project scope, we tend to selected to develop in android platform as a result of it's tending to be smaller and lighter which each low cost smartphone will support the minimum demand of android OS.

1.4.3 Existing Systems

Current web-based Learning Management System targeted on fulfilling the wants of establishments in providing elementary, normal instructional platform. Several universities around the world have with success integrated the utilization of LMS within which all educational data services, on-line content and applications are centralized and managed learning. LMS could be a learning environment for online which statements are been adopted by the students, academics and institutions.

The first example of associate existing system is Moodle system. Moodle may be a free software system package and act as e-learning system that may facilitate educators particularly lecturers to make effective learning communities on-line. Batchuluun (2008) report that the bulk of respondents cited LMS Moodle because the best for his or her purpose. It's not seen because the best product altogether aspects. However, the results showed that higher valuation Moodle of expertise (Momani, 2010). Social constructionist theory guided the planning and development of Moodle and has been greatly influenced by the teaching and learning practices. Moodle is user friendly, versatile and is generally used. Moodle package directly designed around 5 main problems with principle. Moodle web site identifies some things because the principles for mistreatment Moodle (Knight & Bush, 2009).

To use the Moodle, students must provide the details which include their student matric number and password. They can use this site in many beneficial activities such as

downloading the lecture notes, laboratory assessments, online quizzes or uploading their assignments. Before that, they must ensure that they has enrolled to the registered subjects by receive the enrollment key from the lecturers. Below is the screenshot of Moodle:

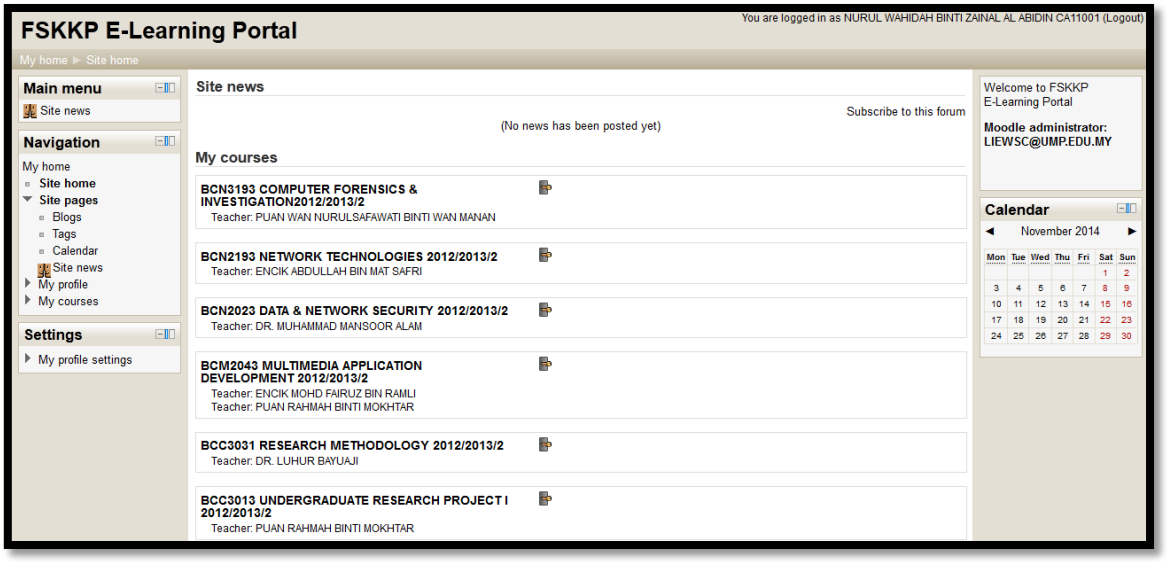

Figure 1.1: Moodle system of FSKKP UMP

Second existing system is social website of Facebook. Facebook is a popular social networking site. Originally, it is restricted to people with .edu email addresses. Facebook is currently available to anyone with a valid email address which the one that is verified by Facebook. Facebook members can join networks based on school affiliation, employers, and geographic regions. Facebook is not just a great way for people to find old friends or learn about what is happening but it is also detected as an incredible learning tool.

Lecturers can utilize Facebook for class projects, for enhancing communication, and for engaging students in a manner that might not be entirely possible in traditional classroom settings. Through Facebook, lecturers can send out reminders about upcoming tests, upcoming due dates, or any classroom news. The figure below is the example usage of Facebook for the educational purpose:

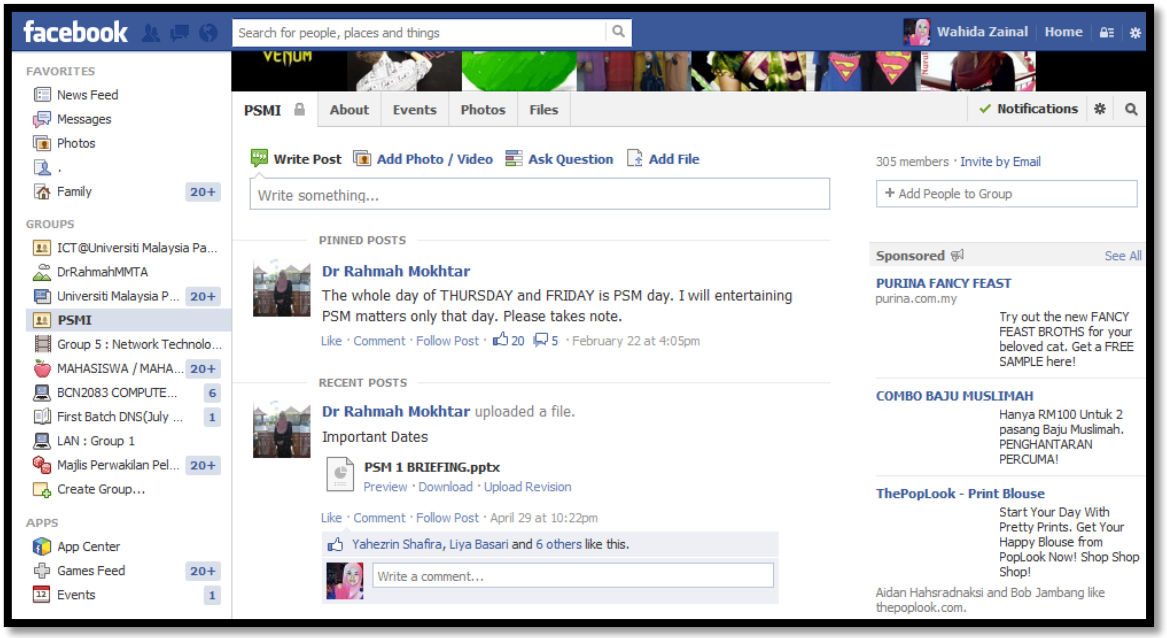

Figure 1.2: Facebook become as learning tool for subject PSM in UMP

A mobile application may be a term applied to explain a kind of application software package designed to run on a mobile device like smartphones or tablets. Mobile applications are usually utilized to produce users with similar services to those that accessed the pc or computer. Now, the popular mobile application is employed to teach, entertain or facilitate users in their daily lives. in line with the journal entitled "We need Definitions Relevant education Mobile Learning" by Yiannis Laouris 1996, he declared that this biological process marked the emergence of the organ within the new timeline of evolution, one that encompasses human language systems, each the hearing and upon receipt the transmission is our speech (Laouris 1996, 2005). The most focus here is that mobile application sometimes helps users by connecting them to web services a lot of usually accessed on desktop or portable computer computers. This mobile application is used as a mobile computer marker utility, a client-based mobile instant electronic communication and lots of alternative applications.

Based on the survey done in UMP, majority of students would really like to use a smartphones to access learning resources in lecture rooms. Students might access the web courseware system and transfer lecturer's notes; synchronize the lecturer’s power point slides on the smartphones. Next existing system is ‘Studious’ mobile application

for android. ‘Studious’ could be a class management app for android that lets the students to form their timetable on the device with customizable sound profiles for every class. With ‘Studious’, they will additionally avail lots of different handy options like note-taking, school assignment or take a look at reminders for numerous classes in conjunction with receiving notifications for each.

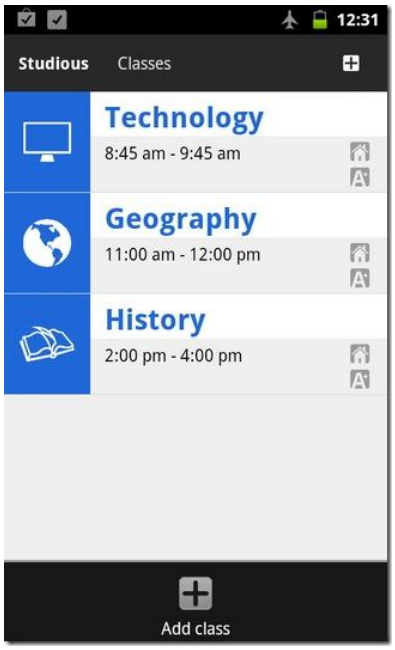

Figure 1.3: ‘Studious’ mobile application for Android

1.4.4 Problems in the Existing Systems

Despite the existence of system characteristics printed on top of, there are several challenges and issues have to be compelled to be solve so as to reinforce the effectiveness of mobile learning applications. These are printed below:

i. Bandwidth issue and connectivity
    a. Participating the academic content needs a mixture of made multimedia system parts. However, as a result of the restrictions of information measure and property, downloading content to the students concerned are slow. This creates disappointment and boredom among students and affects the educational facilities.

ii. Lack of quality content
    a. At this point, there's an absence of prime quality learning content in Malaysia. This is often because of lack of experience and substantial monetary resources needed to develop the content. As a result, most of the educational content has lower interaction and a moderate impact on students.

iii. Difficulty in engaging learners online
    a. Engaging actively students is one among major consider crucial the success of a learning program. On-line learning needs a really high degree of self-motivation and is a smaller amount among our students.

iv. Different interface of different subject
    a. The usage of many interfaces of different subjects enrolled by students in Moodle system may give a contribution to a lot of wasting space. There is no need to do a different interface of different subjects as the students may have difficulty in accessing to their subjects due to enrollment key and so on.

1.5 Current system and its limitation

The existing system is generally utilized by undergraduate students. This method is making certain that there are not any clashes for the each timetable created. The present timetable continuously amendment and concerned several lecturer to handle it. it's taking an excessive amount of their time. The conclusion is that they want a system to assist and improve the method of getting ready the timetable.

With the appearance of the net nowadays, there are concerning four main smartphone platforms android, iOS, Windows Phone seven and Blackberry OS. during this project, developer can concentrate on the android platform that has been well-liked throughout the year. Therefore what makes the android platform thus common particularly considering that it's a relative newcomer to the current market? Within the title of the book "Master the android mobile development platform" by jerome, he explained android as a system that's Java-based software package that runs on Linux kernel 2.6. Elgin, ben (17 August 2005) in their journal "Google Buys android for Its Mobile Arsenal" justify that android may be a Linux-based software package designed specifically for bit screen mobile devices like smartphones and tablets computers. Initially developed by android, Inc., supported by Google Finance, android was launched in 2007 together with the formation of the Open telephone Alliance association of hardware, code and telecommunication corporations dedicated to advancing open standards for mobile devices.

Now there are several applications of learning, as represented within the previous section that live outside the LMS scheme like mobile application particularly. Lecturers are able to initiate using applications and technologies that don't seem to be supported by their institutions LMS and in doing so that they take their students outside of the virtual field. Most mobile learning applications consisting of mobile consumer software package that comes with the server software, internet based mostly generally often liable for managing the users, the content to be delivered to mobile subscribers, pacing learning activities, assessment and activity work. See Figure below.

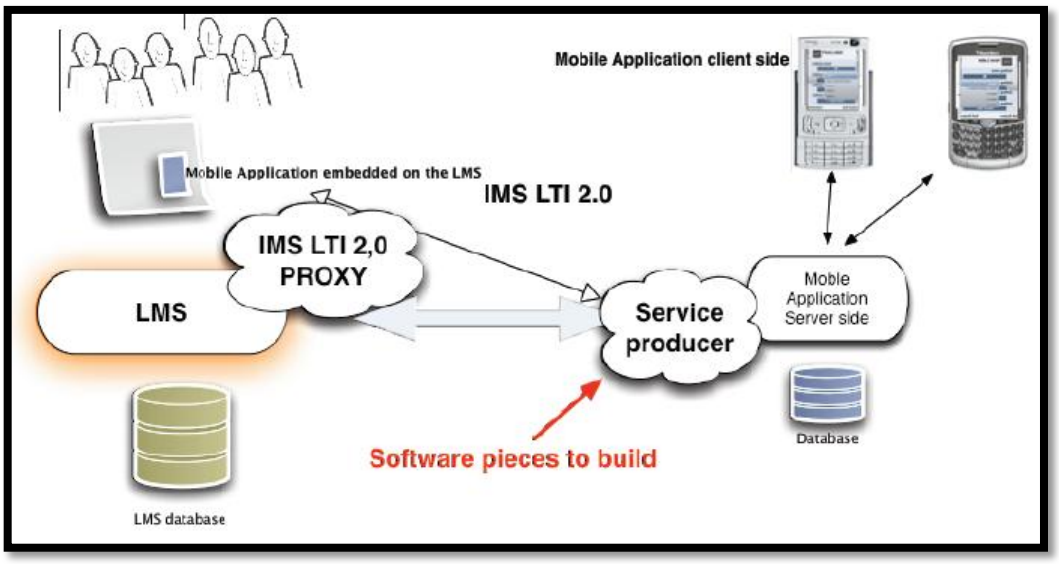

Figure 1.4: Mobile learning application that can be integrated with LMS

'My Mobile Class Assistant App on Android Platform' is a project based on Android OS application which enables the students to view the events of the current subject taken on their smartphones. The content that their lecturers post from Learning Management System (LMS) courses will automatically be available for students to view from their mobile devices on the 'My Mobile Class Assistant application'. Students will also receive course reminder delivered to their mobile devices whenever lecturers post on course content, announcements, graded items, tests, and many other course activities. The system will be embedded through the mobile application by final execution of .apk file.

The users of this system are divided into two categories. The first category would be the lecturers who need their own timetable for the current semester. The second category would be the students who want to see the events or tasks made by lecturers. Students can also have their timetable together with the alerts on the upcoming tasks. The contents of the application, which include text and graphics, would be acquired from the following sources described in the next section. As graphics plays an important role to attract browser attention, creative and nice graphics are needed. Most of the graphics will be downloaded from the Internet and further modified using

either Adobe Photoshop of Macromedia Fireworks. The logo and banner will be created using Adobe Photoshop.

Limitation of this project is only created for the use of FSKKP UMP. Besides that, another limitation is that the FSKKP UMP must have a permanent administrator to maintain the database in the system. Administrator has to key in the data and lecturer for the first time registration. Students also must have internet connection in their smartphone to be able to get the events from the lecturers.

From this system, developer is able to get helpful data for future work. Additional development includes increasing formula for resolution timetabling drawback of over one department at same time. Additionally improving drawback modeling and search technique, reducing execution time and enhancing graphical interface through the mobile application. A lot of analysis is required to complete the interactive and automatic timetable system. The method, techniques and ideas developed should be tested on additional datasets and application.

1.6 Explanations of terminology

Terminology is that the study of and also the field of activity involved with the gathering, description, process and displays of terms, for instance lexical things belonging to specialized areas of usage of one or a lot of languages. Terminology is a knowledge domain field of analysis as a result of it's extremely influenced by the activities and strategies of the areas it serves. Terminology has become a specialized side of linguistics and data science (Dafydd Gibbon, 1998).

Apps are the short kind of applications. Native apps are applications developed to be used on mobile devices, written in a very native programming language like Java or Object-C. Native apps may be sold-out through app stores like Apple's Appstore or Google's App Market. On the opposite hand, internet apps are applications designed with web-standard technology, usually optimized for smaller devices, and additionally

generally simplified versions of existing sites. Most internet Apps are designed with the three web-standard elements that are markup language, CSS, and JavaScript.

There are two styles of internet apps that are traditional internet apps which the appliance designed with hypertext markup language, CSS, and JavaScript and might be accessed via a browser on a mobile device. The other is Hybrid internet apps that the application designed with hypertext markup language, CSS, and JavaScript and regenerate into a native app, so that they will be distributed through an app store like android marketplace.

1.7 Methods of approach

Methods of approach are also known as procedure. It is an ordered sequence and can be understood as a techniques, set of actions, operations and strategies which have to be executed accordingly to the plans. A procedure can be to a perception on how to describe in terms such as obtaining an expected result. There are a number of steps performed by the developer to build the project successfully. The following figure are the steps to develop this project:

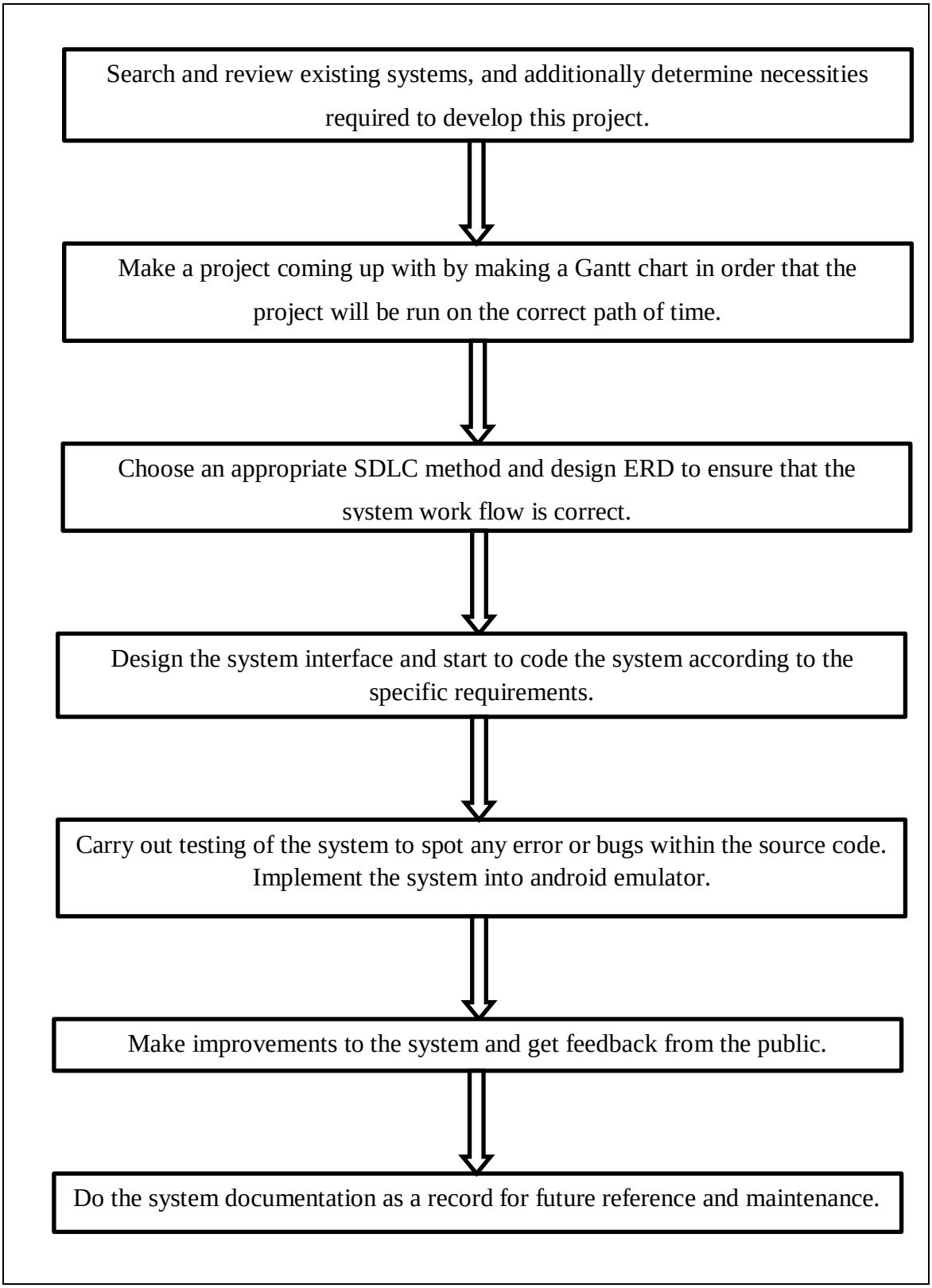

Figure 1.5: Methods of approach for the project